Paleoclimatology

FY 2007 Information Sheet

The CCDD paleoclimatology effort is directed at supporting the CCDD goals of producing long time series of key climate variables, analyzing these time series for information on climate trends and variability, and characterizing the natural background signal of the climate system for the purposes of detection and attribution. An overarching theme is the synthesis and integration of diverse observations, combined with models and process understanding, to advance climate prediction.

For FY 2007, there will be a continuation of the research program managed by CCDD that focuses on high quality reconstructions of the climate history over the Holocene, with an emphasis on the last 2,000 years (i.e., the late Holocene). Proposals are encouraged that address high resolution, multiproxy reconstructions that blend the paleo and instrumental records to achieve the most accurate multi-variable climate history possible. Emphasis will be placed on using currently available measurements at resolutions as fine as seasonal, mining the time- and frequency-domain information in multiple, well-calibrated proxies, and producing spatially complete data sets (i.e., filling in Northern Hemisphere data and supplementing these data with equatorial and Southern Hemisphere data sources). Proposals that involve a substantial field campaign(s) to collect data should be directed to programs other than CCDD, e.g., Earth System History (ESH) at the National Science Foundation (NSF), or other funding sources.

In FY07 proposals will be viewed most favorably if they include one or more of the following foci:
(1) more accurate estimates of climate forcings; (2) rigorous computation of uncertainty bounds in reconstructions; (3) identifying and characterizing historical extreme events that have severely stressed human or natural systems (e.g., the onset, duration, frequency, intensity, and decline of droughts or mega droughts) and their variability, identifying the space and time scales of extreme events that can be resolved in the paleo record, and establishing a common framework for paleo and modern estimates of extremes and the inter-comparison of these records; (4) the use of paleoclimate data to constrain model simulations and validate the ability of models to simulate forced and unforced change; and (5) narrowing the range of climate sensitivity estimates.

Proposed studies should produce data sets that are ready for climatological interpretation.

TECHNICAL DETAILS

Proposals will be considered for up to three years in duration, but one and two year proposals are encouraged. Funds for each subsequent year of multi-year proposals will be subject to a review of annual progress reports. Proposals should indicate how data sets would be archived and made available upon project completion. Principal Investigators should contact the Paleoclimatology Branch of the National Climatic Data Center (NCDC) during proposal preparation to discuss the characteristics of data sets that will be

produced and the appropriateness of these data for archiving at NCDC. If the data will be accepted at NCDC, the proposal budget should include funding, if needed, for archive steps. Contact information is:

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